

## Computer and Information Sciences

## Major - Computer Science

### Catalog Year 2025-2026 and Later

#### Required Computer Science Courses

34 Units

|       |                                               | Units |
|-------|-----------------------------------------------|-------|
| _____ | CIS 377 Intro to Cybersecurity                | 3     |
| _____ | COSC 236 Intro to Computer Science I          | 4     |
| _____ | COSC 237 Intro to Computer Science II         | 4     |
| _____ | COSC 290 Principles of Computer Organization  | 4     |
| _____ | COSC 336 Data Structures & Algorithm Analysis | 4     |
| _____ | COSC 350 Data Communications & Networking     | 3     |
| _____ | COSC 412 Software Engineering                 | 3     |
| _____ | COSC 439 Operating Systems                    | 3     |
| _____ | COSC 455 Programing Languages                 | 3     |
| _____ | COSC 457 Database Management Systems          | 3     |

#### Required Mathematics Courses

15-16 Units

|       |                                         | Units |
|-------|-----------------------------------------|-------|
| _____ | MATH 263 Discrete Mathematics <b>OR</b> | 3     |
| _____ | MATH 267 Intro to Abstract Mathematics  | 4     |
| _____ | MATH 273 Calculus I                     | 4     |
| _____ | MATH 274 Calculus II                    | 4     |
| _____ | MATH 330 Intro to Statistical Methods   | 4     |

#### Required Science Courses (Core 7 and 8)

8 Units

Select 2 lab science courses from the following:

|       |                                         | Units |
|-------|-----------------------------------------|-------|
| _____ | ASTR 261 Intro to Astrophysics          | 4     |
| _____ | BIOL 200 + L Intro to Cell Biology      | 4     |
| _____ | BIOL 206 + L Intro to Ecology/Evolution | 4     |
| _____ | CHEM 131 + L General Chemistry          | 4     |
| _____ | CHEM 132 + L General Chemistry II       | 4     |
| _____ | GEOL 121 Physical Geology               | 4     |
| _____ | PHYS 241 General Physics I              | 4     |
| _____ | PHYS 242 General Physics II             | 4     |

#### Required Core Courses

9 Units

|       |                                                   | Units |
|-------|---------------------------------------------------|-------|
| _____ | COMM 131 Public Speaking (Core 5)                 | 3     |
| _____ | ENGL 317 Writing for Business & Industry (Core 9) | 3     |
| _____ | COSC 418 Ethical & Societal Concerns CS (Core 14) | 3     |

#### Elective Computer Science Courses

12 Units

Group A - At least 2 of the following:

|       |                                               | Units |
|-------|-----------------------------------------------|-------|
| _____ | COSC 417 Intro to Computing Theory            | 3     |
| _____ | COSC 432 Requirements Analysis & Modeling     | 3     |
| _____ | COSC 436 Object-Oriented Design & Programming | 3     |
| _____ | COSC 459 Computer Simulation & Modeling       | 3     |
| _____ | COSC 461 Artificial Intelligence              | 3     |
| _____ | COSC 467 Data Mining                          | 3     |
| _____ | COSC 471 Computer Graphics                    | 3     |
| _____ | COSC 483 Design & Analysis of Algorithms      | 3     |

Group B - At least 2 of the following:

|                                             |                                        | Units |
|---------------------------------------------|----------------------------------------|-------|
| (Only one of COSC 397/COSC 495 may be used) |                                        |       |
| _____                                       | COSC 397 Internship in COSC            | 3     |
| _____                                       | COSC 431 Special Topics                | 3     |
| _____                                       | COSC 435 Mobile App Development        | 3     |
| _____                                       | COSC 440 Operating Systems Security    | 3     |
| _____                                       | COSC 442 Software Assurance & Testing  | 3     |
| _____                                       | COSC 450 Network Security              | 3     |
| _____                                       | COSC 458 Application Software Security | 3     |
| _____                                       | COSC 465 Robotics                      | 3     |
| _____                                       | COSC 484 Web-Based Programming         | 3     |
| _____                                       | COSC 486 Cryptocurrencies & Blockchain | 3     |
| _____                                       | COSC 495 Independent Study             | 3     |

#### Elective Math Courses

3-4 Units

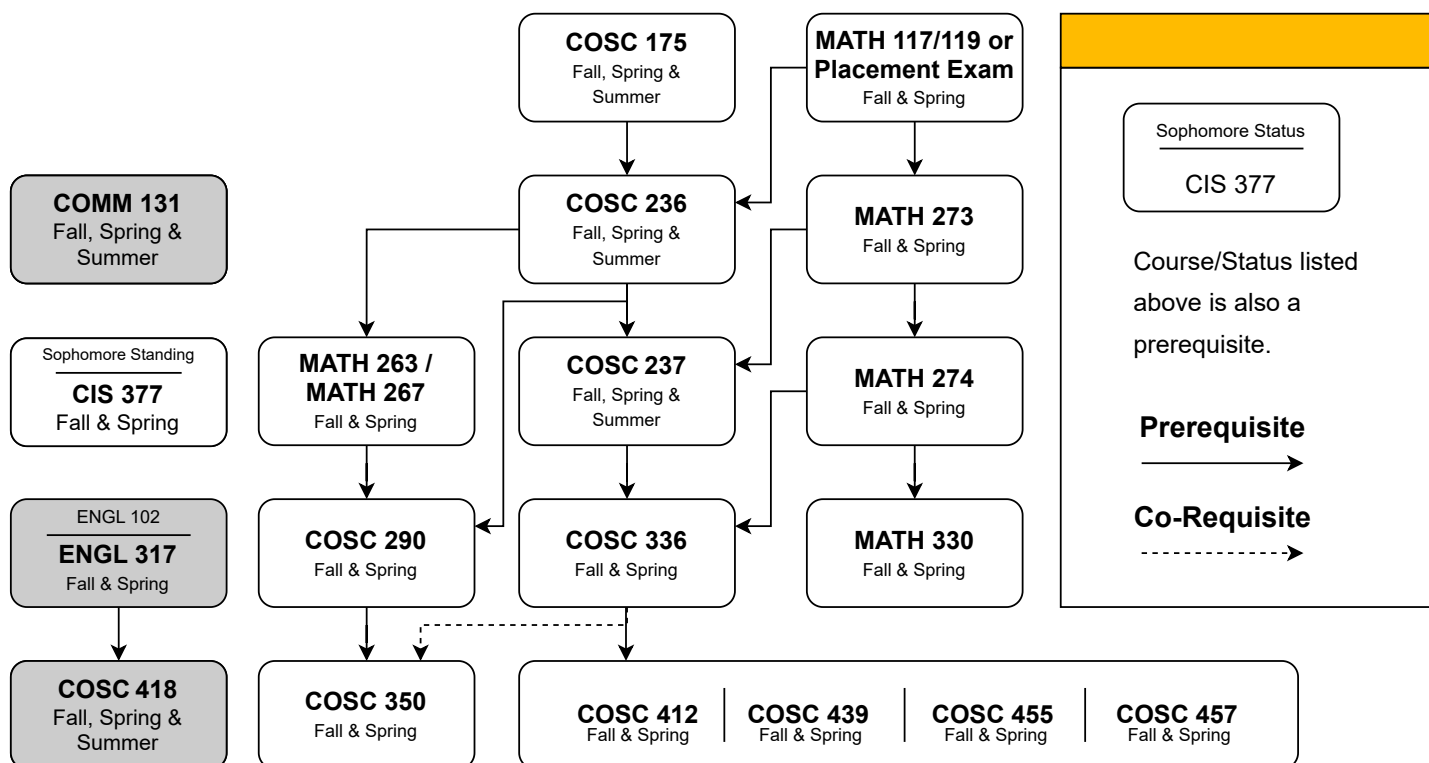
Select one math course from the following:

|       |                                           | Units |
|-------|-------------------------------------------|-------|
| _____ | MATH 265 Elementary Linear Algebra        | 4     |
| _____ | MATH 275 Calculus III                     | 4     |
| _____ | MATH 314 Cryptography                     | 3     |
| _____ | MATH 315 Applied Combinatorics            | 3     |
| _____ | MATH 369 Intro to Abstract Algebra        | 3     |
| _____ | MATH 374 Differential Equations           | 3     |
| _____ | MATH 377 Mathematical Models              | 3     |
| _____ | MATH 378 Scientific Modeling & Simulation | 3     |
| _____ | MATH 435 Numerical Analysis I             | 3     |
| _____ | MATH 436 Numerical Analysis II            | 3     |
| _____ | MATH 437 Operations Research              | 3     |
| _____ | MATH 451 Graph Theory                     | 3     |

**Total Units: 81-83**

# Major - Computer Science

## Catalog Year 2025-2026 and Later



### COSC Elective Prerequisites and Offering

| Elective       | Prerequisites                          | Offered               |
|----------------|----------------------------------------|-----------------------|
| <b>GROUP A</b> |                                        |                       |
| COSC 417       | COSC 336                               | Spring                |
| COSC 432       | COSC 412                               | Fall                  |
| COSC 436       | COSC 336                               | Fall & Spring         |
| COSC 459       | COSC 336, MATH 330                     | Spring                |
| COSC 461       | COSC 336                               | Spring                |
| COSC 467       | COSC 457                               | Fall & Spring         |
| COSC 471       | COSC 336                               | Occasionally          |
| COSC 483       | COSC 336                               | Fall                  |
| <b>GROUP B</b> |                                        |                       |
| COSC 397       | COSC 336, 2.75 GPA, instructor consent | Fall, Spring & Summer |
| COSC 431       | COSC 336, instructor consent           | Fall, Spring & Summer |
| COSC 435       | COSC 336                               | Fall & Spring         |
| COSC 440       | COSC 439                               | Fall                  |
| COSC 442       | COSC 412                               | Fall & Spring         |
| COSC 450       | COSC 350, MATH 314                     | Fall                  |
| COSC 458       | COSC 455, Co-Req COSC 457              | Fall                  |
| COSC 465       | COSC 336                               | Occasionally          |
| COSC 484       | COSC 336                               | Fall                  |
| COSC 486       | COSC 336                               | Occasionally          |
| COSC 495       | COSC 336, approved proposal            | By Permission         |

### MATH Prerequisites

| Elective | Prerequisites                       |
|----------|-------------------------------------|
| MATH 263 | MATH 119, COSC 236                  |
| MATH 265 | MATH 211 OR 273                     |
| MATH 267 | MATH 273                            |
| MATH 273 | MATH 119                            |
| MATH 274 | MATH 273                            |
| MATH 275 | MATH 274                            |
| MATH 314 | COSC 236, MATH 265 or 267, MATH 330 |
| MATH 315 | MATH 263, 265 or 267                |
| MATH 330 | MATH 274                            |
| MATH 374 | MATH 274                            |
| MATH 377 | MATH 265, 274, COSC 236             |
| MATH 378 | MATH 274, COSC 236                  |
| MATH 435 | MATH 265, 274, COSC 236             |
| MATH 436 | MATH 435                            |
| MATH 437 | MATH 265, 331                       |
| MATH 451 | MATH 263 OR 267                     |
| MATH 467 | MATH 369                            |

Find more advising resources at:

<https://www.towson.edu/fcsm/departments/computerinfosci/resources/advising.html>

View Third Attempt / Prerequisite Policy at:

<https://www.towson.edu/fcsm/departments/computerinfosci/resources/>

Visit the CIS Advising Hub in YR 207

Or Email: [cisadvising@towson.edu](mailto:cisadvising@towson.edu)

*\*All course prerequisites are strictly enforced.*